Paper No. 16

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Ex Parte Hyeon-Chang Hong and Yong-Jin Ahn

Appeal No. 1998-0139
Application 08/503,320

ON BRIEF

Before FLEMING, WALTZ and JEFFREY T. SMITH, Administrative Patent Judges.

JEFFREY T. SMITH, Administrative Patent Judge.

Decision on appeal under 35 U.S.C. § 134

Applicant appeals the decision of the Primary Examiner finally rejecting claims 1 to 20. We have jurisdiction under 35 U.S.C. § 134.

BACKGROUND

The invention is directed to a magneto-optical recording medium comprising a bilayer structure composed of a reproducing layer and a recording layer. Claims 1, 7 and 11 are representative of the invention are reproduced below:

1. A magneto-optical recording medium comprising a substrate and a bilayer structure, said bilayer structure comprising a reproducing layer comprising $Nd_x(TbFeCoCr)_{100-x}$ wherein x is an atomic percentage greater than 0 and a recording layer comprising TbFeCoCr.

7. A magneto-optical recording medium for use in a recording medium including a dielectric layer, a protective layer and a reflective layer formed in sequence on a substrate, said magneto-optical recording medium comprising a bilayer structure located between said dielectric layer and said protective layer, said bilayer structure comprising a reproducing layer comprising $Nd_aGd_b(TbFeCoCr)_{100-(a+b)}$ wherein a and b are atomic percentages and a recording layer comprising TbFeCoCr.

11. A recording medium comprising:
a substrate;
a dielectric layer;
a magneto-optical recording medium comprising a bilayer structure, said bilayer structure comprising a reproducing layer and a recording layer, said reproducing layer comprising $Nd_x(TbFeCoCr)_{100-x}$ wherein x is an atomic percentage with a value greater than 0 and said recording layer comprising TbFeCoCr;
a protective layer; and
a reflective layer.

As evidence of obviousness, the Examiner relies on the following reference:

Kato et al. (Kato)	5,030,512	Jul. 9, 1991

THE REJECTIONS

The Examiner entered the following grounds of rejection:

Claims 1 to 20 are rejected under 35 U.S.C. § 103 as obvious over Kato. (Examiner's Answer, page 3).

Claims 1-20 are rejected as being unpatentable under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and claim the subject matter which appellants regards as the invention. (Examiner's Answer, page 4).

OPINION

We have carefully reviewed the claims, specification and applied prior art, including all of the arguments advanced by both the Examiner and Appellants in support of their respective positions.

A. The Rejection under Section 112, ¶2

The Examiner must demonstrate that the claims do not "set out and circumscribe a particular area with a **reasonable** degree of precision and particularity." ***In re Moore***, 439 F.2d 1232, 1235, 169 USPQ 236, 238

(CCPA 1971). The purpose of the second paragraph of Section 112 is to basically insure an **adequate** notification of the metes and bounds of what is being claimed. ***See In re Hammack***, 427 F.2d 1378, 1382, 166 USPQ 204, 208 (CCPA 1970).

The Examiner has rejected claims 1 to 20 as unpatentable under 35 U.S.C. § 112, second paragraph as indefinite.

According to the Examiner, the claims are indefinite because "it is unclear what is meant by the alloy designations." (Answer, p. 4). The Examiner also states '[i]t is clear that the appellant is describing the alloy compositions in terms of atomic percentages of Nd or of Nd and Gd in the reproducing layers in the respective appropriate claims. However, it is unclear whether the remaining portion of the alloy composition formula is to be interpreted in terms of atomic composition. (Answer, p. 10).

We determine that the Examiner has not met the initial burden by failing to present any reasons why one of ordinary skill in the art would not be appraised of the scope of the claims on appeal. The Examiner acknowledges there is no requirement that the recording layer and reproducing layer contain the same amounts of Tb, Fe, Co and Cr. (Suppl. Answer, p. 2). The component composition of the alloy is described by the formula. The Examiner has not identified a basis for questioning the relative ratios of

the elements in the alloy. The claims provide adequate notification of the metes and bounds of the claimed subject matter.

For the foregoing reasons and those set forth in the Brief, the rejection of claims 1 to 20 under 35 U.S.C. § 112, second paragraph, is reversed.

B. The Rejection under Section 103

It is well established that the examiner has the initial burden under § 103 to establish a ***prima facie*** case of obviousness. ***In re Oetiker***, 977 F.2d 1443, 1445, 24 USPQ2d 1443, 1444 (Fed. Cir. 1992); ***In re Piasecki***, 745 F.2d 1468, 1471-72, 223 USPQ 785, 787-88 (Fed. Cir. 1984). To that end, the examiner must show that some objective teaching or suggestion in the applied prior art, or knowledge generally available in the art would have led one of ordinary skill in the art to arrive at the claimed invention. ***Pro-Mold & Tool Co. v. Great Lakes Plastics, Inc***., 75 F.3d 1568, 1573, 37 USPQ2d 1626, 1630 (Fed. Cir. 1996).

According to the Examiner, Kato teaches magneto-optical recording medium having a reproducing layer and a recording layer that have alloys containing the claimed elemental composition. The Examiner asserts, Kato's magneto-optical recording medium differs from the claims because of the specific atomic ratio of the alloys. The Examiner concludes it would have been obvious to vary the atomic ratio composition of the alloys to arrive at the claimed subject matter. (Answer, p. 3).

Appellants assert Kato does not disclose the particular composition of the reproducing layer or the combination of a reproducing layer and a recording layer of claim 1. Further, Kato discloses too many possible alloys to render the claimed invention obvious. (Brief, pp. 4-8).

The subject matter of claim 1 is directed to a magneto-optical recording medium comprising a substrate and a bilayer comprising $Nd_x(TbFeCoCr)_{100-x}$ wherein x is an atomic percentage greater than 0 and recording layer comprising TbFeCoCr. Kato discloses the first and second magnetic layers can comprise a variety of elements including the elements contained in the recording and reproducing layers of claim 1. (Cols. 2 and 3). Kato's embodiment 3 describes a magneto-optical recording composition comprising a first layer containing Nd, Co, Fe and Cr and a second layer containing Tb, Fe, Co and Pt. Kato's embodiment 4 describes a magneto-optical recording composition comprising a second layer containing Tb, Fe, Co and Cr. Kato's embodiment 7 describes a magneto-optical recording composition comprising a first layer containing Nd, Tb, Fe and Co and a second layer containing Nd, Tb, Fe and Co. The magneto-optical recording composition of embodiment 3 differs from claim 1 in that the first layer does not contain Tb and the second layer contains Pt instead of Cr. From our perspective, the idea of forming a magneto-optical recording medium comprising a first layer containing Nd, Co, Fe, Cr and Tb and a second layer containing

Tb, Fe, Co and Cr would have been obvious to one of ordinary skill in the art because to arrive at the claimed invention one of ordinary skill in the art would modify the alloys of embodiment 3 by adding Tb to the alloy of the first layers and replacing the alloy of the second layer with the alloy of embodiment 4 (or to put it another way, replace Pt with Cr in the alloy of the second layer of embodiment 3). These modifications flow logically from the use of the specific elements having been individually taught by Kato, thus establishing a ***prima facie*** case of obviousness. ***In re Kerkhoven,*** 626 F.2d 846, 850, 205 USPQ 1069, 1072 (CCPA 1980). One of ordinary skill in the art would reasonably expect that the use of Tb in the first alloy and the substitution of Cr for Pt in the second alloy, would each produce the same effect as when used individually. "For obviousness under § 103, all that is required is a reasonable expectation of success." ***In re O'Farrell,*** 853 F.2d 894, 904, 7 USPQ2d 1673, 1681 (Fed. Cir. 1988). In light of the foregoing and for the reasons expressed in the answer, it is our determination that the Examiner has established a ***prima facie*** case of obviousness with respect to the subject matter of claim 1.

Appellants direct our attention to page 17 of the specification to exhibit critical factors associated with the claimed invention. (Brief, p. 8). It is well settled that evidence presented to rebut a ***prima facie*** case of obviousness must be commensurate in scope with the claims to which it pertains and that such evidence which is

considerably more narrow in scope than claimed subject matter is not sufficient to rebut a ***prima facie*** case of obviousness. ***In re Dill,*** 604 F.2d 1356, 1361, 202 USPQ 805, 808 (CCPA 1979). Also see ***In re Boesch,*** 617 F.2d at 276, 205 USPQ at 219; ***In re Lindner, id.*** and ***In re Susi, id.*** Here, the Appellants' evidence of nonobviousness is not limited to the scope of claim 1. All of the evidence relied upon contains the element Gd, which is not a component contained in the alloys of claim 1. Therefore, the evidence of superior results in not probative relative to the Examiner's reference evidence of obviousness.

Appellants assert claims 2 and 3 provide a preferred range and optimal range for the value x (atomic percent). Appellants assert these claims are separately patentable for these recitations. The arguments advanced by the Appellants as to why claims 2 and 3 are separately patentable do not meet the requirements of the rule. The recitation of optimal or preferred ranges as set forth in these claims do not particularly point out why the claims are patentable over Kato. Accordingly, claims 2 and 3 fall with independent claim 1. ***Ex parte Schier,*** 21 USPQ2d 1016, 1019 (Bd. Pat. App. & Intf. 1991); ***Ex parte Ohsumi,*** 21 USPQ2d 1020 (Bd. Pat. App. & Intf. 1991).

Claims 4, 5 and 6 differ from claim 1 in that they specify thickness of the reproducing layer, recording layer and bilayer structure respectively. Kato discloses and exemplifies the thickness of the magnetic layers. Embodiment 1 specifically

discloses the thickness of the first layer to be 100 Angstroms and the second layer to be 1000 Angstroms which fall within the ranges of the claims. Thus, Kato describes embodiments which would motivate one of ordinary skill in the art to use layers in thicknesses which render the claimed subject matter obvious. Appellants have not established the criticality of the thickness of the layers.

For the reasons stated above, the 35 U.S.C. § 103 rejection of claims 1 to 6 is affirmed.

Claims 7 to 10 describe a magneto-optical recording medium comprising a reproducing layer comprising $Nd_aGd_b(TbFeCoCr)_{100-(a-b)}$ wherein a and b are atomic percentages and a recording layer comprising TbFeCoCr. The Examiner has not provide rationale for modifying Kato's first magnetic layer to include Gd. As stated above, the examiner has the initial burden under § 103 to establish a ***prima facie*** case of obviousness. In the absence of sufficient factual evidence or scientific rationale to establish why and how a skilled artisan would have arrived at the subject matter of claims 7 to 10 from the applied reference, we find that the initial burden of establishing the ***prima facie*** obviousness of the claimed subject matter has not been met. The 35 U.S.C. § 103 rejection of claims 7 to 10 is reversed.

Claims 11 to 20 describe recording medium comprising five layers. Specifically, a substrate, a dielectric layer, magneto-optical recording medium

comprising a bilayer structure, a protective layer and a reflective layer. The Examiner has not directed us to the portions of the Kato reference which discloses or renders obvious the use of the specifically claimed five layer recording medium.

In the absence of sufficient factual evidence or scientific rationale to establish why and how a skilled artisan would have arrived at the subject matter of claims 11 to 20 from the applied reference, we find that the initial burden of establishing the ***prima facie*** obviousness of the claimed subject matter has not been met. The 35 U.S.C. § 103 rejection of claims 11 to 20 is reversed.

CONCLUSION

The 35 U.S.C. § 103 rejection of claims 1 to 6 is affirmed. The 35 U.S.C. § 103 rejection of claims 7 to 20 is reversed.

Time for taking action

No time period for taking any subsequent action in connection with this appeal may be extended under 37 CFR § 1.136(a).

AFFIRMED-IN-PART

MICHAEL R. FLEMING Administrative Patent Judge	)
THOMAS A. WALTZ Administrative Patent Judge	) BOARD OF PATENT) APPEALS AND) INTERFERENCES
JEFFREY T. SMITH Administrative Patent Judge	)

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